

settled down together in one group and arranged all the eggs and immature stages together, forming what appeared to be a single colonial unit. The ants did not, at any stage, show any sign of intercolonial hostility and this indicates the absence of colony specific odours in *Technomyrmex albipes*. Such a feature has been recorded in a few other ants also (Wilson 1963).

DEPARTMENT OF ZOOLOGY,
MALABAR CHRISTIAN COLLEGE,
CALICUT, KERALA,
March 11, 1969.

A. B. SOANS
J. S. SOANS

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28. A NOTE ON *APANTELES PALUDICOLAE* CAMERON (BRACONIDAE; HYMENOPTERA) A PARASITE OF *EXELASTIS ATOMOSA* W.

Bhatnagar (1948) and Usman & Puttarudriah (1955) have reported *Apanteles exelastisae* and *Apanteles* sp. (*Glomeratus* group) as the larval parasites of *Exelastis atomosa*., a destructive pest of *Cajanus cajan* in Bihar and Mysore. However, they did not mention anything about the biology, period of activity and extent of parasitisation caused by the braconid to the crop pest.

During the course of field observations and laboratory rearing a larval braconid parasite, *Apanteles paludicolae* C. was recorded. Its biology in relation to symptoms of injury to host larvae and extent of parasitisation were studied.

Symptoms of parasitised larva : The third instar larvae of the pest were parasitised, and these lose the pinkish colour of the healthy larva changing to a pale white. The size of the parasitised larva was reduced and its feeding activity slowed down. It died soon after the emergence of the parasite.

Biology : The parasite lays one to two eggs in the body of the host which hatch in 4-5 days. The grub feeds for 7-9 days inside the body of the host and when full grown emerges by cutting an irregular hole on the lateral side of the fourth abdominal segment of the host. On an average, the full-grown grub measured 3.5 mm. in length and 0.68 mm. in breadth. Body fleshy, creamy white, covered with very fine short hairs. Some 30

to 45 minutes after emerging, it spins a cocoon and pupates. Cocoon creamy white, oval in shape and on an average measures 3.5 mm. in length and 1.9 mm. in breadth. Pupal period varies from 5-7 days. The adult braconid cuts a hole at the anterior end of the cocoon and emerges. A single life cycle was completed in 18-21 days, and adults lived for 2-5 days. The average duration of each period recorded in 7 cases is summarised in Table 1.

TABLE 1
LIFE CYCLE AND LONGEVITY OF *Apanteles paludicolae* IN DAYS

Month	Incubation period	Larval period	Pupal period	Life cycle period	Adult longevity
October 1965..	4	9	5	18	5
November 1965	5	9	7	21	3
December 1965	5	7	6	18	2

Extent of parasitism and period of activity: Regular collection of the larvae of the pest made to note the extent of braconid parasitism revealed that it was as high as 18% during the month of October but fell to 10% and 7% during November and December 1965.

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J. N. KRISHI VISHVA VIDYALAYA,
GWALIOR,
April 16, 1969.

B. V. DESHPANDE
S. C. ODAK

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29. LOCALIZED MASS BREEDING OF *HAEMAPHYSALIS BISPINOSA* NEUMANN, 1897 (ACARINA, IXODIDAE) IN KYASANUR FOREST DISEASE AREA, SHIMOGA DISTRICT, MYSORE STATE, INDIA

(With two plates)

INTRODUCTION

The tick, *Haemaphysalis bispinosa* Neumann, 1897, has been recorded from different localities in India, parasitizing several species of mammals